

Durham Research Online

Deposited in DRO:

15 June 2012

Version of attached file:

Published Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Thurston, A. and Tymms, P. and Merrell, C. and Conlin, N. (2012) 'Improving attainment across an education authority.', *Better : evidence-based education.*, 4 (2). pp. 8-9.

Further information on publisher's website:

<http://betterevidence.org/uk-edition/issue-9/>

Publisher's copyright statement:

Additional information:

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in DRO
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full DRO policy](#) for further details.

Improving attainment across an education authority

Allen Thurston, Peter Tymms, Christine Merrell, and Nora Conlin consider lessons learned from a project designed to improve attainment across a whole local education authority

GOVERNMENT ATTEMPTS TO RAISE

attainment through policy initiatives are often disappointing. Evidence suggests that it is hard for large-scale, top-down reform to improve pupils' attainment. For example, despite numerous reforms in English primary schools stemming from the introduction of the Education Reform Act in 1988-2007, including national literacy and numeracy strategies, there has been virtually no improvement in reading standards and only a small improvement in maths.

Ways to achieve systematic school reform at a local authority level have been well researched, and four main issues appear to influence effectiveness:

- Schools have to "buy into" school reform;
- The organisational constructs and structures between the local authority and what is required to support schools should be aligned and interconnected;
- Capacity building needs to be seen as a core function by local authority managers; and
- There needs to be understanding of the "defined autonomy" between the local authority's expectations and each school's unique circumstances.

The Fife Peer Tutoring Project has established a model which might be used to further investigate the wide-scale systematic use of school reform.

Peer tutoring

Peer tutoring involves children helping other children learn. Pupils work together in pairs with one child as the tutor and another as the tutee. It is important that peer tutoring is set up so that the tutor benefits, as well as the tutee. Previous research has shown the technique to be an effective approach to learning and teaching in primary schools, with the most positive effects reported for younger, urban, low income, and ethnic minority pupils. Peer tutoring was cited as providing high impact for low cost in the recent Sutton Trust report on pupil premiums (see further reading).

The Fife Peer Tutoring Project

In the Fife Peer Tutoring Project a peer tutoring intervention was evaluated over a two-year period in 129 primary schools in one Scottish local education authority (LEA). The intervention successfully raised attainment in reading and mathematics across the whole LEA.

The project investigated the following key questions:

- Which works best in practice, same-age or cross-age peer tutoring?
- Is an intensive or a lighter peer tutoring approach most effective?
- Is it more beneficial for pupils to participate in only reading or mathematics peer tutoring, or for them to participate in both?

Design of the study

Schools were either allocated to cross- or same-age tutoring; light or intensive tutoring; maths, reading, or maths and reading in a "clustered randomised

In reading, the Paired Reading technique involved switching between the tutor and tutee reading together and the tutee reading alone. Books chosen by pairs had to be above the independent readability level of the tutee, but below that of the tutor and appropriate to their interests. This facilitated the tutor helping the tutee through the error correction process. The tutor and tutee started by reading together. The tutee signalled to read alone. Upon an error the tutor waited 4 to 5 seconds and if the tutee did not self correct, was corrected by the tutor. The tutee repeated the error word correctly and the pair read together again until the tutee signalled to read alone. The tutee read alone until the next error.

In maths, Duolog Mathematics involved discussion between tutor and tutee to help solve maths problems. First pairs read the problem together, then the tutor would contextualise it for the tutee. The tutor would question the tutee as to how they would approach solving the problem. The tutee talked out loud as they solved the problem. Tutor and tutee checked answers, and summarised the nature of learning on that problem. Finally, the tutor generalised that learning to related but new contexts.

☞ Cross-age peer tutoring stood out as positively enhancing cognitive attainment for both reading and mathematics ☞

controlled trial". Nearly 9,000 8–10 year-old pupils were involved. Interventions were implemented for a 15 week period per year, for two consecutive years.

Pairs of children were matched on the basis of previous reading or mathematics attainment (depending on the subject being tutored). In cross-age conditions pupils within classes were ordered from highest to lowest in reading/mathematics attainment. The top-attaining tutor in the older class tutored the top-attaining tutee in the younger class, and so on. In the same-age conditions, classes were ordered from highest to lowest attainment in reading/mathematics. All above the mid-point became tutors, all below became tutees. The top-attaining tutor tutored the top attaining tutee, and so on.

Teachers attended two CPD sessions per year. These provided overviews and demonstrations of the techniques and research design. A manual and videos to support teachers were provided for each school. Teachers were supported in developing forward plans with other teachers to implement the project. More than 250 teachers were trained in the peer tutoring techniques during the two years.

Prior to the project, and for its duration, the LEA had an assessment system in place (the Performance Indicators in Primary Schools (PIPS) project) provided by the Centre for Evaluation and Monitoring at Durham University that enabled the progress of pupils to be monitored. The assessments included group written tests of mathematics and reading.

Results and conclusions

The analyses produced a clear conclusion. Cross-age peer tutoring stood out as positively enhancing cognitive attainment for both reading and mathematics in two differently aged cohorts, for both tutors and tutees. It suggests that the approach is robust against the vagaries of implementation. Although the impact was modest, this might be improved through attention to detail, for example in extending or improving CPD. No other interventions had as great an impact on reading or maths, and there was no real benefit to using reading and maths together.

In terms of LEA-wide school reform in the UK, the Fife Peer Tutoring Project provided a number of important lessons. Many of these relate to the process of school reform. A feature of the project was the ability of the project team to engage with the LEA. The LEA was a partner in the research/school reform process, and CPD days were co-ordinated and funded in partnership with the LEA with the director of education in the LEA introducing each event. Also important was the project team's wider engagement with head teachers, teachers, and parents as partners in the school reform process. Head teachers included the process in their individual school development plans and prioritised teacher attendance at the CPD events. CPD events also facilitated the establishment and development of networks of teachers, who met to discuss related issues. Our perception is that the high-level involvement of the LEA and the professional development of teachers gave a collective purpose and shared conceptualisation regarding the aims and purposes of the project.

The challenge for school reform in Scotland and beyond will be to find ways of facilitating systematic change at the school district level where there is often increasing devolution of school management and power. This is particularly prevalent in England, where the establishment of the new academy status for schools may need different ways of working. An EEF-funded follow-up to the Fife project, funded by the Education Endowment Foundation, is being led by Allen Thurston, Christine Merrell, and Andy Wiggins from Durham University, and will attempt to scale-up peer tutoring to work in four LEAs in a randomised controlled trial in 90 schools taking place over the next four years. The disparate nature of LEA context and wide variety of LEA-level support should provide fresh challenges to gauge the ability of peer tutoring to promote school reform at scale-up.



What we know

- Cross-age peer tutoring was effective at raising attainment in reading and mathematics in schools across a whole LEA.
- Same age tutoring, whilst easier to organise, was not effective.
- It is possible to work with schools on a wide basis on a clustered randomised controlled trial.
- Schools benefit from careful and systematic support from LEA managers to help them develop new ways of working.

About the authors

Allen Thurston is a reader at the School of Education, Durham University. His research interests are peer tutoring, co-operative learning, science and mathematics education, learning with information and communications technology, elementary/primary education and social inclusion in respect of visual impairment. He is a fellow of the Wolfson Research Institute and a member of the Scottish Parliament Cross-party Standing Committee on Visual Impairment (allen.thurston@durham.ac.uk).

Peter Tymms is a professor of education and Head of School of Education, Durham University. His research interests are: monitoring, assessment, peer learning, ADHD, Rasch measurement and research methodology (peter.tymms@cem.dur.ac.uk).

Christine Merrell is the Director of Research at the Centre for Evaluation and Monitoring, Durham University. Her research interests are assessment development and monitoring the progress of children through primary school (christine.merrell@cem.dur.ac.uk).

Nora Conlin is an education officer at Fife Council. Her interests include school management and school improvement, and peer learning (Nora.Conlin@fife.gov.uk).

Acknowledgement

The research project was supported by a grant from the Economic & Social Research Council, Knowledge Transfer Partnerships scheme. Keith Topping and David Miller from the University of Dundee were co-investigators on the grant.

Further reading

Tymms P et al (2011), Improving Attainment Across a Whole District: School Reform Through Peer Tutoring in a Randomized Controlled Trial. *School Effectiveness and School Improvement*, 22(3): 265–289.

Higgins S, Kokotsaki D, and Coe R (2011), *Toolkit of Strategies to Improve Learning: Summary for Schools Spending the Pupil Premium*. Sutton Trust/Durham University: Durham, UK. www.suttontrust.com/research/toolkit-of-strategies-to-improve-learning/